

REMARKS/ARGUMENTS

Reconsideration of this application is requested.

In the Office Action, the Examiner objected to FIG. 1 of the drawings as failing to show the reference numeral 10 identified in paragraph [0018]. In response, FIG. 1 of the drawings has been amended to include this reference numeral. Reconsideration and removal of this objection is requested.

In the Specification, the Examiner further objected to the language recited in the Abstract. In response, the Abstract has been amended in compliance with MPEP guidelines. Reconsideration and removal of this objection is requested.

Claims 1-3, 9 and 10 were rejected under 35 U.S.C. 102(b) as being anticipated by Sugishima et al. Claims 4, 5, 7, 17 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Konrad et al. Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Schantz et al. Claims 8 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Sway-Tin et al. Claims 11 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Dollar, II et al. Claim 14 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Sway-Tin et al. as applied to claim 13 above, and further in view of Schantz et al. Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Way-Tin et al. as applied to claim 13 above, and further in view of Konrad et al. Claim 16 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Sway-Tin et al. as applied to claim 13 above, and further in view of Dollar, II et al. Claim 19 was rejected under

35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Konrad et al. as applied to claim 17 above, and further in view of Suzuki. Claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sugishima et al. in view of Konrad et al. as applied to claim 17 above, and further in view of Schantz et al.

In response, Applicant has canceled claims 4, 5, 7, 11, 12, 15-17 and 19 without prejudice. Applicant has amended independent Claims 1 and 13 to patentably distinguish over the cited references of record. New claim 21 is added herein. Claims 18 and 20 have been amended to depend from newly added claim 21.

Present claim 1 recites in relevant part:

An AC ground fault detector system for sensing an AC signal indicative of an unintended electrical path between a load driven by a DC power source and a reference potential, said system comprising:

a first power conductor coupled to a first terminal of said power source;

a second power conductor coupled to a second terminal of said power source;

a switching mechanism...whereby, in the event of an occurrence of said unintended electrical path of at least one phase of the load with the reference potential, time varying voltages are developed at the first power conductor and second power conductor...

a detector comprising an input port coupled to the first power conductor for receiving the voltage or current signal on the first power conductor and having a capacitor coupled to said input port, said capacitor operable for performing one of a charging and discharging operation in response to said time varying voltage signal, said capacitor being coupled to said reference potential through an impedance device or transformer for generating a detected signal; a processing circuit for processing said detected signal and comparing with a threshold value; and an output port for generating an output signal based on said comparison; whereby the occurrence of the unintended

electrical path between the load and reference potential causes a change in the voltage or current signal on the first power conductor of sufficient magnitude relative to the threshold value for detection by said detector such that the output signal of the detector is indicative of a detected fault. (emphasis added).

Neither Sugishima et al nor any of the cited references of record disclose or fairly suggest the features and limitations recited in present claim 1. More particularly, the present invention as recited in claim 1 enables ground fault detection on AC outputs of a DC system through a sensing capacitor (see for example C62 of FIG. 1) arranged to be coupled the first power conductor and “operable for performing one of a charging and discharging operation in response to said time varying voltage signal, said capacitor being coupled to said reference potential through an impedance device or transformer for generating a detected signal”.

In contrast, Sugishima et al. teaches an AC power (1 in FIG. 3) for generating signals coupled through a smoothing capacitor 3 and clearly fails to disclose the aforementioned limitations. Further, none of the other cited references of record disclose or suggest such structure and function as recited in independent claim 1. Accordingly, claim 1 as amended patentably distinguishes over the cited references of record and should be allowed. Claims 2-3, 6 and 8-10 depending from independent claim 1 also patentably distinguish and should be allowed; reconsideration and removal of these rejections is respectfully requested.

Claim 13 was rejected under 35 USC 103(a) as being unpatentable over Sugishima et al. in view of Sway-Tin et al. Claim 13, having been amended this rejection is traversed. Claim 13 as amended recites in relevant part

a detector circuit coupled to said first power conductor..., wherein said detector circuit comprises a capacitor having a first terminal coupled to the first power conductor and a second terminal coupled to a first terminal of a resistor network or transformer, said resistor network or transformer having a second terminal coupled to said reference potential, said capacitor operable for performing one of a charging and discharging operation in response to said sensed change in voltage, and wherein said fault signal is generated in response to a comparison of a signal resulting from said sensed change in voltage relative to said reference potential; (emphasis added).

Neither Sugishima et al. in view of Sway-Tin et al., nor any of the other cited references of record disclose or suggest such structural features and limitations as recited in present claim 13. Accordingly, claim 13 patentably distinguishes over the cited references of record and should be allowed, as should claim 14 depending therefrom; reconsideration and removal of this rejection is requested.

Newly added method claim 21 recites

A method for detecting an unintended electrical path between a phase lead of a motor and reference potential during power servicing of the motor by a power unit, the motor being selectively coupled to one of first and second power conductors according to a switching mechanism at a predetermined switching rate, and wherein an at least one capacitor is coupled between one of the first power conductor and second power conductor, and the reference potential, the method including steps of:

receiving at said first power conductor a time varying voltage signal in the form of a square wave having a peak value corresponding to the magnitude of the voltage of the power source and indicative of the occurrence of said unintended electrical path;

capacitively coupling said received voltage signal through one of an impedance network and a transformer connected to said reference potential to obtain a detected signal;

comparing said detected signal with a threshold value; and;

interrupting the servicing of power to the motor when the detected signal exceeds the threshold value. (emphasis added).

None of the references either singly or in combination teach or suggest each of the steps recited above in present claim 21. Note that present claim 21 finds support throughout the specification and drawings, including, for example, FIGs. 1 and 4. Claims 17 and 18 likewise patnetably distinguish, at least by virtue of their dependency from base claim 21. Allowance of these claims is respectfully requested.

In view of the foregoing, Applicants respectfully submit that claims 1-3, 6, 8-10, 13-14, 18 and 20-21 are in condition for allowance. Favorable reconsideration is therefore respectfully requested.

If a telephone conference would be of assistance in advancing prosecution of the above-identified application, Applicants' undersigned Attorney invites the Examiner to telephone him at 609-919-4428.

Respectfully Submitted



Edward J. Howard
Registration No. 42,670
DUANE MORRIS LLP
100 College Road West, Suite 100
Princeton, NJ 08540
Telephone: (609) 919-4428
Facsimile: (609) 919-4401

Date: December 19, 2003

PTN36514.1

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FIG. 1

